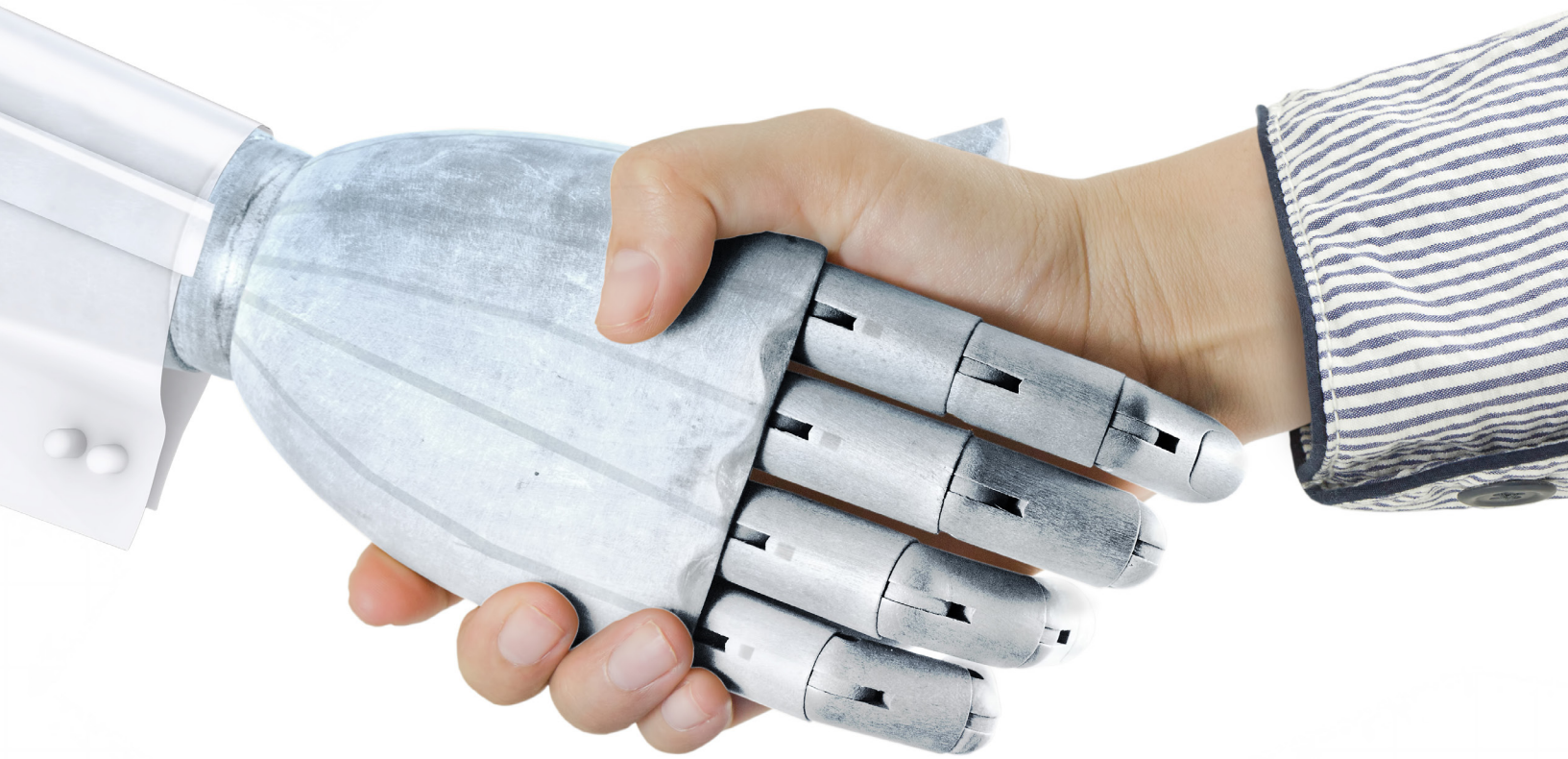


THE TECHNOLOGY ISSUE

EXECUTIVE TALENT

 AESC

Volume Eight



The Bionic Workforce

How will automation change executive roles and the future of talent acquisition

Leadership
during the
Fourth Industrial
Revolution

How has
technology
changed
candidate
assessment?

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Welcome to the technology issue

from Karen Greenbaum, AESC President & CEO

In the last ten years, the speed of technological growth has changed our lives significantly. We spend more time than we ever have before staring at computer screens. We communicate through them, we complete our work on them, we are entertained by them and we manage our lives with them. You'll struggle to find an industry or profession today that hasn't been irrevocably changed in the last ten years by technological developments.

What will the next ten years hold? How will our lives change? How will our relationship with work change? Will we need to champion a new generation of leaders who are as comfortable managing data and robots as they are leading a human workforce?

For a profession that hinges above all else on the ability to establish and maintain long-term trusted relationships, we mustn't lose sight of what makes us human – the ability to connect to one another on an emotional level. But we must also embrace new technologies and grasp new opportunities as they arrive.

In this issue we explore some of the technology trends that will inform the next decade of business leadership and question how to strike a balance between the art and science of strategic advising. Our highlights include:

- Over the next decade business leaders will be presented with the

opportunity to automate more tasks than ever before, leading to improved efficiency but also potentially coming at a cost to people in the workplace. Will this change the way that business leaders make decisions and the traits that we value in successful leaders? We explore McKinsey's latest research into **automation in the workforce** and apply it to C-suite roles and the executive search profession.

- The notion of striking a balance between art and science is central to Gerd Leonhard, a leading European Futurist's new book, **Technology vs. Humanity**. We are excited to republish the opening chapter of his book along with a brief Q&A, where he describes the scale of change we could witness in the next decade and discusses the opportunities and threats that the next wave of technology could pose.
- The rise of robotics, analytics, Cloud computing and many other recent innovations have led to the Fourth Industrial Revolution – named **Industry 4.0**. The Industrial sector is the largest segment for the profession worldwide so we explore how Industry 4.0 is changing clients' businesses and the effect that has on the executive

search and leadership consulting profession.

- Technology has also changed every functional role, but none more so than **technology roles** themselves. Ten years ago there was no such thing as a Chief Information Security Officer, but today they're some of the most coveted executives. We explore how clients are tackling cyber security and also how CIOs have moved from the systems management roles of a decade ago to being leaders in strategic conversations.
- For executive search and leadership consulting firms, new technologies are enabling new possibilities for **executive-level assessments**. We explore how these assessments work, who provides them and how, in some cases, they are providing the foundation for a broader service offering.

Thank you to the many people who participated in the interviews and research that went into this issue of *Executive Talent* – clients, candidates and AESC members. As ever, I welcome your feedback on these topics, our magazine and all matters relating to executive talent. Welcome to the technology issue! ■

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The Global Magazine from AESC

Issue Eight

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The Bionic Workforce

The exponential growth of technology is transforming the way we live and work. How will automation change the executive roles of the future and what impact will that have on senior talent acquisition?

Ray Kurzweil, Google’s Chief Futurist, believes that we will have computers with the processing power of the human brain by 2025 and the processing power of the entire human race by 2050. Having predicted the fall of the Soviet Union, the astronomical rise of the internet and the day when a computer could beat a chess champion (as happened in 1997 when IBM’s Deep Blue computer triumphed over Gary Kasparov), Dr. Kurzweil is not to be ignored.

We now live in a world where self-driving cars could soon be zipping around large cities, personal assistants could be automated through machine learning, drones can deliver items in minutes instead of days, and we trust algorithms to

recommend the restaurants we eat in, the TV shows we watch, the books we read and the holidays we book.

So what do these changes mean for the future of work? Are we on the brink of widespread technology-led unemployment? Or are we approaching an unparalleled era of technology-enabled human productivity?

Where could machines replace us?

The McKinsey Global Institute recently explored these questions in its whitepaper ‘Where machines could replace humans – and where they can’t (yet)’. The central thesis is that very few, if any, entire

Time spent on activities versus technical feasibility of automating those activities

(source: McKinsey)



Time spent on activities by C-suite functional role

(source: AESC)

	Managing Others	Applying Expertise	Stakeholder Interaction	Unpredictable Physical Work	Data Collection	Data Processing	Predictable Physical Work
CEOs	35%	31%	16%	2%	7%	7%	2%
CFOs	32%	30%	17%	3%	9%	8%	2%
CHROs	33%	26%	20%	2%	8%	9%	2%
CIOs	28%	26%	21%	4%	10%	10%	1%
CMOs	32%	29%	19%	3%	7%	9%	2%
CSOs (Sales)	36%	30%	15%	2%	8%	6%	2%



**Least susceptible
to automation**

**Most susceptible
to automation**

occupations will be entirely automated in the next decade, but almost all jobs will be affected in some way. The whitepaper breaks down work into seven activities, analyses how much time is currently spent on each activity and predicts the technical feasibility of automating them in the next decade by adapting current technology.

The three activities most likely to be automated in the next decade are predictable physical work, data processing and data collection, while the least likely activities are managing others, applying expertise and stakeholder interactions. To provide an additional filter, AESC surveyed 400 executive search consultants and executive-level candidates to understand how much time is spent performing each activity and, therefore, project if there are certain executive roles that may be more susceptible to automation.

In all seven C-suite roles, we explored the time spent on the three least automatable

activities (managing others, applying expertise and stakeholder interaction) totals over 75% - and scores over 80% in the case of CEOs, CMOs, CSOs and GCs. Excelling at these activities requires a combination of outstanding leadership traits – such as agility, emotional intelligence, decisiveness – and deep industry and functional knowledge built over decades of professional experience. These factors are so nuanced and differ so much from one person to another, which makes it much harder to automate.

When noting the small share of time spent on the four activities that are more likely to be automated, it is likely that C-suite roles won't change dramatically in the next decade, in terms of the activities being performed themselves. However, the fact that the C-suite appears so impervious to automation suggests that the impact of automation will be felt on a larger scale further down the organization.

Richard Vincent (The Netherlands), Partner at Leaders Trust / AltoPartners, says: “Technology will lead to much fewer middle management roles and will raise conversations around what skillsets we will need for leaders. I believe that key competencies will be interpersonal skills, communication and an ability to understand and work with other cultures.”

So while the time spent completing activities in the C-suite may not change, the focus likely will. For instance, managing others ranked as the activity that C-suite executives spent the most time on, even more so than applying expertise. If the next decade poses the potential for large-scale automation of activities, that will pose new leadership and management challenges.

Managing automation

Gerd Leonhard, a leading futurist and author of *Technology vs. Humanity*, believes that business leaders need to be conscious of the ripple-effects of their decisions as they relate to automation and they need to start thinking about these issues now. “The

question is no longer whether technology can do something for us,” he says. “The question is now about purpose. What do we want technology to do and how far do we want to go with it?”

If new technology becomes available tomorrow that can cut costs and improve efficiency, executives will be under pressure to adopt it. But what if it also leads to tens of thousands of redundancies? One of the caveats that McKinsey builds into its predictions is that the extent to which a process or industry can be automated partly depends on societal acceptance. In the whitepaper, they cite healthcare as the best example: “A robot may, in theory, be able to replace some of the functions of a nurse. But, for now, the prospect that this might actually happen in a highly visible way could prove unpalatable for many patients, who expect human contact.”

While social acceptance could be a contributing factor in decision making, Leonhard believes we need to build checks and balances for technology development now: “If we don’t regulate this power and have a social conduct to deal with its

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Time spent on activities by AESC members

(source: AESC)

Managing Others	Applying Expertise	Stakeholder Interaction	Unpredictable Physical Work	Data Collection	Data Processing	Predictable Physical Work
23%	32%	25%	1%	15%	3%	1%



possibilities, it could end up very ugly.”

In essence, Leonhard is recommending that we don’t lose sight of what makes us human in the first place; traits such as intuition and emotional intelligence define us and give us the ability to be outstanding leaders. These traits will become even more valuable as we enter a new business climate where more can be done with less human resource.

How will automation affect executive search?

Executive search professionals will need to be attuned to these changes as they happen, to ensure that they are advising clients and recommending candidates based on the potential for significant technological change in the next decade. But will automation have an impact on the profession itself?

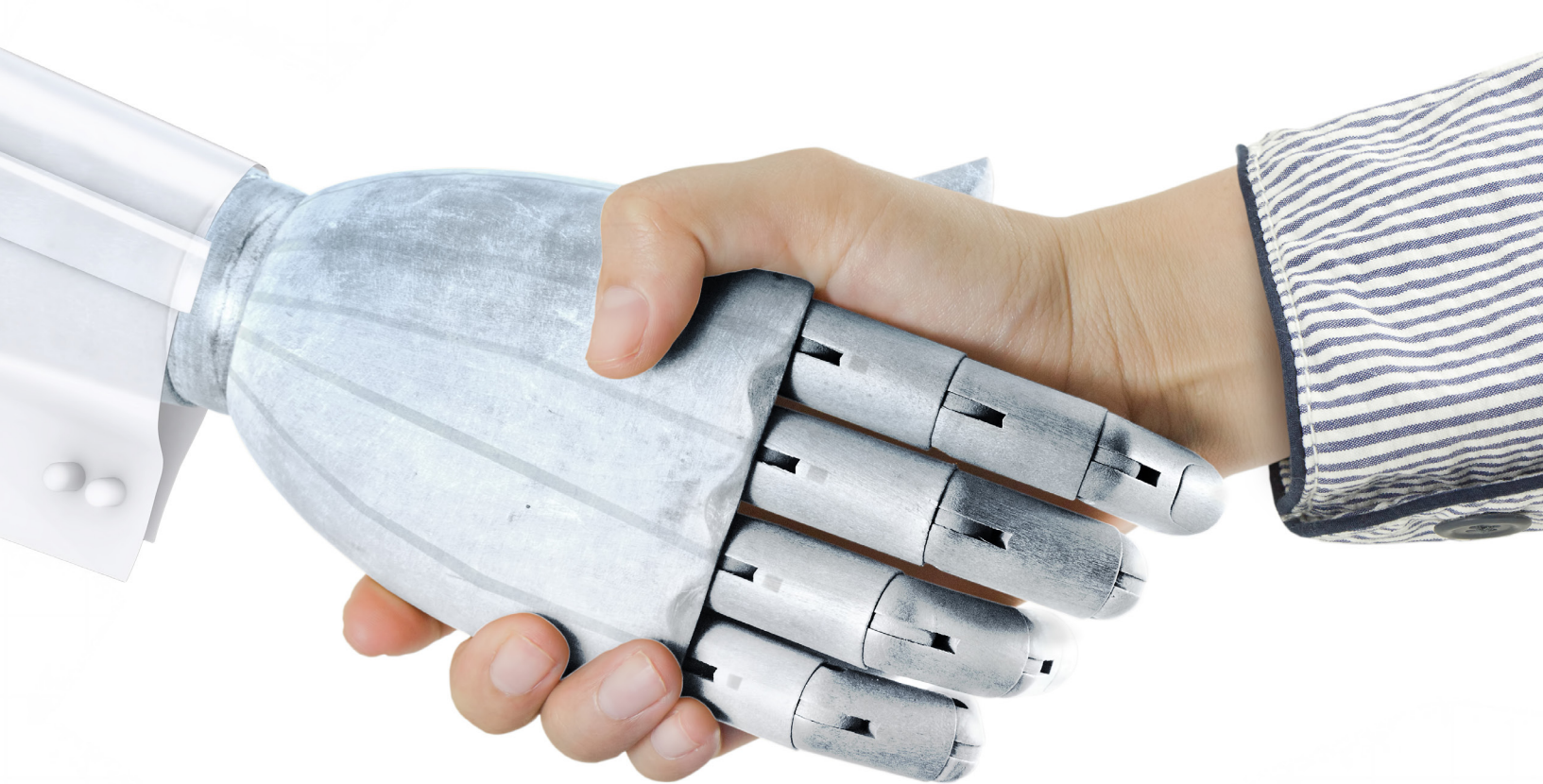
The results of our survey of AESC members paint a similar picture to the outline of the C-suite roles: 81% of time is spent on the three activities that are least likely to be automated. However, much more time is spent on data collection, which McKinsey gives a 64% rating in terms of technical feasibility of automation.

The responses to our survey of AESC members were exclusively from consultants

and partners, so it would be interesting to see how much the time spent on data collection increases when looking at research – perhaps the function that faces the greatest disruption in the next decade. As Mikael Stelander (Finland), Regional Vice President, Europe, Middle East and Africa at Stanton Chase, explains, this presents an opportunity for the research function to become more elevated. “The first phase of innovation will be digitalized administrative and research services,” Stelander says. “Being able to quickly pull longlist data using our existing databases and algorithms will make us better and quicker. Then we can focus on elevating the research function to that of a knowledge center.”

Jeremiah Lee (USA), Leadership Advisory Consultant at Spencer Stuart, expands on this further. “Technology could certainly enhance research efforts across different function and practice areas. If we can aggregate that data, we could pick up some really interesting themes that may not seem so intuitive to a person analyzing the data.”

One of the interesting challenges for executive search and leadership consulting firms in the future will be ensuring that their knowledge grows as quickly as the client organizations change. Traditionally a consultant will have spent years in industry



to build their knowledge, but if those industries change dramatically overnight, the consultant must ensure that they remain relevant. “As complexity increases, so does the complexity of the executive roles and the complexity of the executive search to fill those roles,” says Anton Derlyatka (Russia), Senior Partner at Ward Howell. “A key success factor is to understand your client’s business as well as they do. With the increasing pace of change, it adds pressure to adapt quickly. But there will always be a situation where a client needs someone who can grasp the complexity and context of the role they want to fill.”

Technology is enabling the advancement of long-standing executive search techniques to provide more scientific data about clients, candidates and cultures. As we cover later in this magazine (turn to page 12), advances in psychometric testing, assessment centers, cultural assessments and other methods have significantly enhanced what we know about leadership. But even in these instances, the most significant factor by a long shot is the judgment of the human interpreting the data.

Alec Ross, author of *The Industries of the Future*, agrees. “As software eats more of what we do, deep domain expertise becomes ever more important. It’s a terrible time to be mediocre, because the insistence on excellence will grow higher. As the world becomes more saturated by technology, at

the high end of the labor scale people are going to demand more human interaction and a vaulted experience.”

This can be seen in the market that has emerged for high-end travel agents. Who would have thought several years ago when brick and mortar travel agents were closing down that there would be a thriving industry for holidays that cost \$100,000 and more? But if you’re going to book a once-in-a-lifetime trip to somewhere exotic, you expect a better service than holiday booking websites are able to provide.

While automation, enabled by increased human capital analytics, may further hurt talent acquisition at the middle-manager level, there comes a certain point where the human touch is essential. As was the case with LinkedIn and the internet before that, there may be critics who suggest otherwise, but the profession has demonstrated agility and openness to embrace these new technologies when they have emerged. Ultimately it comes down to balance and adaptability, as Leonhard concludes: “If you ignore technology you definitely won’t be successful because you won’t have enough information to make informed decisions. But if you give yourself over entirely to technology, you will simply become a machine.” ■

Turn to page 31 to read the opening chapter of Gerd Leonhard’s new book: *Technology vs. Humanity*.

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Hybrid: The Art and Science of Executive Search

How has technology changed the assessment of candidates and what opportunities do these innovations create?

The dramatic rise of technology over the last decade has equipped executive search and leadership consulting firms to serve their clients in new and increasingly transformative ways – fusing new tools and techniques with the traditional foundations of the profession. It's not too long ago that an executive search consultant's little black book was their biggest asset. But the technological developments of the last decade have codified what executive search consultants have always known about leadership into useful identification and assessment tools.

The more senior the search, the more nuanced it becomes. Unsuccessful hires at the executive level aren't down to the core competencies of an individual; they are down to what up until recently were considered to be intangible metrics. Understanding soft skills, cultural fit, leadership development potential and emotional intelligence is the *modus operandi* for any major executive search and there are now a whole range of techniques to identify these traits.

Experts working with experts

Executive-level assessments come in many different forms: in-person interviews, psychometric tests, cultural assessments, and simulated case studies, to name just a few. Over the last five years in particular, we have seen an increase in the number of AESC members acquiring or partnering with external assessment companies. In the last 18 months alone Korn Ferry has acquired Hay Group and Pivot Leadership, Heidrick & Struggles has acquired Senn Delaney, Philosophy IB and Co Company, Russell Reynolds has formalized its partnership with Hogan, Caldwell Partners has built a

relationship with Caliper Assessments and Alder Koten has acquired OCE Consulting. Beyond this, many AESC members are partnering with external firms to provide their clients with talent analytics at a level of sophistication we have never seen before.

By acquiring, partnering with or licensing the products of established consulting firms and assessment providers, executive search firms are furthering their commitment to high standards by aligning themselves with experts in their field. This is not simply a case of taking tools that are used for middle managers and slightly tweaking them; these partnerships lead to quality work that is consistent with the trusted service that the best executive search firms have been providing for decades.

Blending art and science

Ian Cameron (USA), Managing Director at The McQuaig Institute – which has been providing psychometric testing solutions for 50 years – explains how recent developments provide opportunities for executive search firms to have even more valuable in-person interviews: “We can ask the client organization to prioritize a series of statements that relate to the ideal candidate they would like to appoint,” Cameron says. “Their answers generate a job profile that can sit alongside their initial outline for the assignment, and is compatible with the results of the candidates' psychometric testing. The end product is a customized behavioral interview guide so that the consultant can know where to dig deeper.”

This provides a great example of how the science behind the scenes has improved and has enabled deeper and more targeted in-person interviews, elevating the art of the profession, as Elan Pratzner,





Managing Partner at Caldwell Partners in Canada, explains in relation to his firm's new partnership with the assessment firm Caliper. "Caliper comes at the process with a scientific methodology. Caldwell Partners comes at the process with thousands of hours of time spent with clients and candidates."

Similarly, cultural fit is an area that is increasingly acknowledged as absolutely crucial in the success or failure of an executive appointment. Jim Hart (USA), Chief Executive Officer at Senn Delaney, a Heidrick & Struggles company, explains: "If there is a cultural mismatch between an organization and a new executive, the culture will act as antibodies. This is particularly pertinent when a board is looking for a CEO to lead organizational change. You have to identify the cultural landscape that an executive is entering and

help them to see the cultural landmines that they may step on. Otherwise, that executive will be as successful as a parent telling a teenager to clean their room."

In his book *Good to Great*, Jim Collins explains that organizations with a well-aligned culture are six times more successful than their competitors. Similarly, in Spencer Stuart's article 'Leading with Culture' they suggest that lack of culture fit is responsible for as many as 68% of executive new hire failures.

A third assessment technique that is used by select AESC members is simulated case studies. By replicating a real-life business scenario that would be relevant to the client organization, executive search firms are able to get insight into how a candidate would respond. Henrik Brabrand, CEO and Partner at TRANSEARCH Copenhagen, explains: "About 25% of the candidates we

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assess say they would respond one way and then act different in the simulated business environment. It's not that people are trying to intentionally mislead us. It's just that their best intellectual answer is not the truest answer roughly one in four times."

The greatest trends for the profession

In *Executive Talent 2020* we asked AESC members to identify the greatest trends in the executive profession over the next five years. Three of the top four answers were: adapting to new executive search technology, emerging industries and new executive roles, and expanding leadership advisory services.

Through the different assessment techniques outlined in this article, executive search firms are amassing powerful data sets on specific leadership profiles. Jeremiah Lee (USA), Leadership Advisory Consultant at Spencer Stuart, explains that data-supplemented executive search can be especially powerful when new executive roles emerge that are still evolving. "When the candidate pools are not that deep and you have to get more creative, technology can see connections and adjacencies that individuals may not have intuitively come up with," he says. "Technology is very good at identifying subtle differences. For example, a lot of candidates will talk about how they are creative and capable of thinking outside of the box. But we now know that if we're looking for candidates to be disruptive, notions like curiosity are more powerful and less frequently mentioned."

This data, and the partnerships with assessment firms that yield some of the data, creates a platform on which executive search firms can expand into new services. In *Executive Talent 2020*, we also asked clients whether they would be open to working with executive search firms on a broader range of services in the next five years. Of the nine services we listed, seven of them had a 66% or higher positive or neutral response rate – including succession

planning, board advisory services, internal talent assessment, executive coaching, interim management, leadership effectiveness studies and compensation studies.

One of the hallmarks of executive search, as enshrined in AESC's Code of Professional Practice, is objectivity, and Stephan Juhl Nielsen (Norway), Managing Partner at KingBird Executive Search / AltoPartners, explains how this can also be extremely useful when using assessment techniques outside of a search assignment. "We recently did a management audit for a large company in the financial sector and they wanted to go from five managers to three managers," he says. "We did personality tests and then, in discussion with the managers themselves, one of them explained that they didn't feel comfortable in a management position and would like to focus on product development, as they had done up until that point in their career."

Ultimately, assessment technologies are a useful resource in the executive search and leadership consultant's toolkit. It can provide fascinating insights about individuals, organizations, and entire populations of executives. But, as ever, the true value comes in its use and interpretation by people. Jason Baumgarten, Partner at Spencer Stuart, says: "The risk is that if you focus too much on just assessment data, you can lose sight of the bigger picture. We see people amassing huge portfolios of psychometric data and then not knowing how to use it to help them make a decision. It's like finding out that someone is the best athlete in the world and forgetting to ask what sport they play."

Even the world's best algorithms, used by consumer technology companies like Google, Amazon and Facebook, get it wrong sometimes, so human insight is a crucial filter. Ultimately, the value of the hybrid between art and science becomes cyclical: as the art gets better, the algorithms behind the science can be improved; as the science gets better, the art can be more specific and targeted. ■

Leadership during the Fourth Industrial Revolution

How will the Fourth Industrial Revolution impact the skills that executives need in order to thrive in such a rapidly changing sector?

The first Industrial Revolution, in the 18th century, created machines to replace manual labor, and gave us the steam engine and water power. In the early 20th century, the second Industrial Revolution gave us electricity, which birthed the assembly line and mass production. Between the 1950s-70s, electronics, computers and digital technology gave birth to automation in manufacturing – ushering in the third Industrial Revolution.

And now we face the fourth Industrial Revolution – or, as the German government called it for the first time in 2011, Industry 4.0.

There are nine core tenets of Industry 4.0 (see below), some of which have existed for some time in a partially siloed environment. But Industrial business leaders believe that they now have the technology to combine these tenets to have a revolutionary effect.

PwC's recent Industry 4.0 survey gathered information from more than 2,000 companies across 26 countries and demonstrates the excitement in the sector about the confluence of these technologies. Globally, over one-third of businesses expect their revenue gains to exceed 20% over the next five years, while 43% expect

The nine technologies underpinning Industry 4.0



Simulation

3-D simulations using real-time data will allow operators to test and optimize machine settings on the product line, increasing quality and driving down machine setup times.



The Industrial Internet of Things

More devices—sometimes including even unfinished products—will be enriched with embedded computing and connected using standard technologies.



Horizontal and vertical system integration

With Industry 4.0, companies, departments, functions, and capabilities will become much more cohesive, as cross-company, universal data-integration networks evolve and enable truly automated value chains.



Big Data and analytics

The collection and comprehensive evaluation of data from many different sources (including production equipment and enterprise and customer management systems). Supports real-time decision making.



Autonomous robots

Manufacturing companies have used robotics for many years, but as the robots become more autonomous, flexible and cooperative, they will be able to work with one another and in partnership with humans – as is the case in Audi's Smart Factories.



Cybersecurity

With the increased connectivity and use of standard communications protocols that come with Industry 4.0, the need to protect critical industrial systems and manufacturing lines from cybersecurity threats increases dramatically. As a result, secure, reliable communications as well as sophisticated identity and access management of machines and users are essential.



Additive Manufacturing

Companies have just begun to adopt additive manufacturing, such as 3-D printing, which they use mostly to prototype and produce individual components. With Industry 4.0, these additive-manufacturing methods will be widely used to produce small batches of customized products that offer construction advantages, such as complex, lightweight designs.



Augmented reality


Augmented-reality-based systems support a variety of services, such as selecting parts in a warehouse and sending repair instructions over mobile devices. These systems are currently in their infancy, but in the future, companies will make much broader use of augmented reality to provide workers with real-time information to improve decision making and work procedures.



The Cloud

With Industry 4.0, more production-related undertakings will require increased data sharing across sites and company boundaries. At the same time, the performance of cloud technologies will improve, achieving reaction times of just several milliseconds. As a result, machine data and functionality will increasingly be deployed to the cloud, enabling more data-driven services for production systems. Even systems that monitor and control processes may become cloud based.

Industrial business leaders' expectations for Industry 4.0, according to PwC



	Expect revenue gains over 20% in the next five years	Expect to lower costs more than 20% over the next five years	Expect to increase efficiency by more than 20% over the next five years
Global	35%	43%	56%
Americas	37%	39%	50%
APAC	39%	57%	68%
EMEA	39%	41%	55%

to lower costs by more than 20% over the next five years and 56% expect to increase efficiency by more than 20% over the next five years.

The level of optimism shows that Industry 4.0 is not a gimmick or a PR stunt – it is enabling Industrial businesses to expand their portfolio of products and services, drive efficiency and innovation, cut costs and lead to greater opportunities for globalization.

As technology grows exponentially, business leaders will have to make complex calculations based on a number of factors quickly, as Bernard Perry (UK), Managing Partner at TRANSEARCH, explains. “What’s interesting about the leaders of tomorrow is they will need to see the big picture and the very fine detail simultaneously,” he says. “You don’t need to be a programmer or a digital expert, but you do need to recognize and extract the relevant and valuable insights from the quantity, granularity and speed of available information.”

Opportunities and evolving business models

The new landscape for innovative approaches and entirely new service lines may be exciting Industrial business leaders, but success hinges on how quickly businesses can identify opportunities and execute on them. This is particularly true of the Industrial giants, many of whom have been in existence for decades, if not a century, and have hundreds of thousands of employees. As the saying goes: the bigger the ship, the longer it takes to turn around. So can these Industrial cruise liners mobilize or are they at risk of disruption from more nimble businesses?

Robert Quinn (Canada), Partner at Odgers Berndtson, says: “We’re seeing an evolution of business models, especially in capital-intensive businesses. Instead of just manufacturing a product, businesses are now manufacturing and servicing the product, using advanced data and analytics. And then in some instances they are manufacturing, servicing and financing the product. Their clients no longer want to pay for a billion dollar power plant – they want to lease it by the hour. In turn, the Industrial companies are moving further upstream.”

For example, in 2009 the General Electric CEO Jeffrey Immelt paid a visit to some GE scientists who were working on on-board sensors for jet engines. During the conversation, he realized that the data could someday be as valuable as the jet engine itself, if not more so. He set in motion a new strategy to target what is now called “the industrial internet” – which will collect and analyze data on how GE’s hardware performs, enabling GE to continuously improve the products they lease to their clients. But this strategy sailed GE into occupied waters – pitting the 124-year-old company against the likes of Amazon and IBM. In spite of the competition, the strategy could yield a significant pay-off, with GE executives recently predicting that the market for the industrial internet will reach \$225 billion by 2020.

Gert Herold (Austria), Global Industrial Practice Leader for Stanton Chase, explains that this transition hasn’t been comfortable for everyone. “The entrepreneurial spirit died down and people took fewer risks after 2009 [financial crisis],” he says. “Decisions have been postponed. Even in recruitment, Industrial companies have been playing on the safe side and only taking people

from the competition. But in reality you're stirring from the same soup and it has to be changed. If you have a structural problem, you have to look to bring in expertise from other areas."

Blurred lines

But as Jordan L. Brugg, Spencer Stuart's North American Industrial Practice Lead, explains, the move upstream has led to greater competition from other sectors and competition for talent can cut both ways. "The lines between the Industrial and Technology sectors today are really blending," he says. "Industrial companies have to compete for talent against tech companies such as Google, Apple and others. There is absolutely a war for talent and the perception is that many of the older Industrial companies have been slower to change."

For Industrial companies that find themselves losing talent to technology companies, Brugg recommends that they think about part of their value proposition in terms of legacy and heritage. "They have a track record of adapting to change over a much longer period of time – many going

back one or two Industrial Revolutions. They have the experience and history to show that they can make technological advances and adapt to changes that fundamentally alter how we live and work."

What does this mean for the profession?

The rate of change and innovation within the sector raises questions over how executive search consultants can remain relevant. When at least a part of your value proposition hinges on your industry experience and knowledge, how can you ensure that you keep pace with your clients' needs and understand the leadership challenges they are facing? This is particularly pertinent as, according to AESC's *Executive Talent 2020* report, the Industrial sector accounted for 28.4% of searches started across the profession in 2015.

Stanton Chase's Herold explains: "We have to understand the technologies behind these innovations and the changes that has on leadership style and the labor market. We have to make sure that we stay educated and understand what the early adopters are doing. We now have clients

Top five client challenges now:



- Lack of diversity
- Lack of key leadership successors
- Competition for talent
- Mismatch of current talent and future strategies
- Need for digital expertise

Top five client challenges in the future:



- Aging demographics
- Globalization
- Competition for talent
- Shortage of technical expertise
- Lack of leadership successors

asking us for entirely new roles. It's similar to the internet and e-commerce – many clients didn't know what they were looking for and relied on our expertise."

Spencer Stuart's Brugg explains that the speed of change and innovation also makes it challenging for clients to build meaningful succession plans. "The common challenge is that with the rate of change, it's hard to predict what the business is going to need long-term. You need to be forward thinking, but long-range planning can now fall into shorter cycle times since the speed of current technology breakthroughs and its impact on how business operates is unprecedented."

In AESC's *Executive Talent 2020* report, we asked clients about their top three areas in which they would consider working with an external advisor today and in the next five years. 'Lack of key leadership successors', 'mismatch of current and future strategies' and 'need for digital expertise' all ranked in the top five challenges being faced today. They also ranked highly in the areas that clients intended to work with external advisors today.

When looking at how this changes in five years' time, we can see that the top challenges shift and the areas where clients

expect to work with external advisors tend to become less of a concern. This shows that there is optimism about the positive impact that external advisors can have in the near future to help clients deal with the rapid changes that are taking place.

It is notable that 'globalization' becomes the second biggest challenge and the biggest area that clients expect to work with external advisors in the future. In a recent whitepaper on Industry 4.0, Deloitte explained that "technology will become the universal language of business". Ultimately, many of the technological developments underpinning Industry 4.0 will drive unprecedented opportunities for globalization, but clients will have to move quickly to ensure they have the infrastructure, strategy and talent to capitalize on this opportunity.

By experimenting with combined human and robotic workforces – as companies like Audi are doing in their Smart Factories – they have the potential to shape the future of many workplaces around the world. But responding to these opportunities requires agility and technical acumen – both in terms of the Industrial leaders and the executive search consultants who place them. ■

The talent implications of Industry 4.0



CEOs (and general managers) need to be transformers who can identify and capitalize on disruptive trends rather than watch and fall victim to them.



All C-suite members need digital/technology fluency (similar to an acceptable level of financial expertise) in order to remain relevant. The same holds true for board directors.



Companies need to add technical expertise around IOT technology (sensors, connectivity and data & analytics) and there is a new war for talent in software in particular.



Traditionally vertically integrated and somewhat insular, slow moving industrial companies need to learn to operate effectively in ecosystems, partnering for the latest technology while jockeying to capture maximum value. This has created demand for a new type of ecosystem business development leader.

- David Finke, Global Technology Practice Leader, Russell Reynolds Associates

TECHNOLOGY THE: FACILITATOR? ENABLER? THREAT? OPPORTUNITY? DISRUPTOR? GAME CHANGER?

Technology has led to innovation in every sector and function over the last decade. What impact has that had on the technology-focused roles of CIOs and CISOs?

Technology advances over the last decade have undeniably transformed executive-level talent acquisition and C-suite roles. Every industry and function has been disrupted. For technology specialists, this disruption has been both a challenge and an opportunity.

It was only nine years ago that the first iPhone was released. Further, we have seen the incredible growth of cloud computing and Software-as-a-Service (SaaS) – with investment banking firm Centaur Partners predicting that the market for these services will grow from \$13.5 billion in 2011 to \$32.8 billion this

year. Both of these disruptions created tremendous pressure for consumer friendly goods and services that were quick, easy-to-use and available on demand.

These innovations have changed the way that we view technology. In the process, they have completely transformed the role of Chief Information Officers (CIOs) and effectively created an entirely new executive role – the Chief Information Security Officer (CISO). In this article, we explore how both roles have evolved in recent years and where to find the best-in-class talent in both disciplines.

CIOs

As digital disruption transformed our expectations of what technology could do for us, Chief Information Officers found themselves at an inflection point: they could take the opportunity to elevate themselves within the business and drive commercial innovation, or they could maintain their focus on systems management.

“The traditional CIO was responsible for making sure the internal system trains ran on time – improving efficiency, keeping costs in check and generally avoiding major errors,” says David Finke (USA), who leads Russell Reynolds Associates’ Global Technology Sector and is the founder of the firm’s Digital Transformation Practice. “Now IT can be a source of competitive advantage or a reason that companies get disrupted out of existence. Today’s top CIOs don’t just support the business with well-functioning back office IT systems. They also engage strategically to find sources of sustainable differentiation across the value chain so as to focus precious internal resource on what truly matters while partnering with external providers for the rest.”

CISOs

A decade ago, IT security specialists were mostly concerned with systems management and anti-virus software. But the wave of digital innovation of the last ten years has left many, if not most, organizations significantly underprepared for cyber security threats. Over the last three or four years the demand for CISOs has exploded, following a wave of high profile breaches too numerous to list. “Even in the last few years the role of the CISO has evolved and changed,” says Gerry McNamara (USA), Global Managing Director of Korn Ferry’s CIO Practice. “There has been a lot of education needed from consultancies to help boards understand what realistic expectations are. The level of engagement by boards regarding matters of both cyber and physical security has risen to an all-time high primarily driven by a desire to manage reputational and operational risk.”

Part of the shift for leadership has been to understand the new environment that we live in: cyber security is no longer about simply keeping hackers out of your systems and data; it is about minimizing the damage once an inevitable breach occurs. Threats can come from any number of places, as a recent Boyden study (called ‘Cybersecurity: Is Your Board on Board?’) of 36 client organizations shows (see chart below).

An additional layer of complexity for CISOs to navigate is that the industry for security software has exploded just in the last couple of years, as Lambert Rugani (USA), who leads Spencer Stuart’s CISO team, explains. “The market for tooling and technology has exploded tenfold,” he says. “So many firms have entered the market with niche solutions. While this provides more opportunity for new insights on threats, we now see CISOs considering consolidation of tools and an added focus on automation.”

Q. HOW HAS THE ROLE CHANGED?

WHERE DO THE BIGGEST THREATS TO YOUR ORGANIZATION COME FROM?



Source: Boyden

Q. WHAT SKILLS DO EXECUTIVES NEED TO BE SUCCESSFUL?

CIOs

“When we work on a CIO assignment now, we answer to the CEO or the board,” says Baard Storvseen, Managing Partner at TRANSEARCH Norway. “They are looking for people with strategic skills who can act as an advisor.”

To shift their value proposition towards a more commercial and strategic function, CIOs have to demonstrate many traits that have not traditionally been associated with technology leaders: high levels of emotional intelligence, ability to influence other business leaders, and a holistic overview of technology’s role in the business.

Cathy Holley (UK), Partner and Co-Head of Boyden’s CIO Practice, says: “What makes a world-class CIO has nothing to do with technology anymore. What differentiates them is that they are outstanding leaders who can motivate people through difficult times and manage difficult stakeholders. They are expected to provide shareholder value and that means demonstrate commercial value.”

CISOs

“The ideal CISO needs to be a little bit like Cary Matheson [from hit TV show *Homeland*]: smart, fearless, intuitive and more than just a little bit paranoid,” says Jay Hussey, who leads Odgers Berndtson’s US Technology Practice. “Cyber security is more chess than checkers – you may have to sacrifice a few pieces to win the game. Breaches will happen but how you learn about them and respond is crucial.”

However, CISOs also need to exhibit more traditional leadership skills as well: particularly communication and ability to collaborate and influence others. With reputational risk being clients’ biggest concern about a cyber breach, these executives need to be as comfortable building relationships with PR firms and IT vendors alike, building multifaceted responses to identify, respond and recover from an attack. If they don’t manage this skillfully, they can become unpopular pretty quickly, as Jan-Bart Smits (Holland), Technology Practice Leader at Stanton Chase, explains. “Changing behavior is extremely difficult and it requires excellent social skills. CISOs have to explain why they’re implementing more rules and systems that may make people’s lives more difficult. They have to help people understand the importance of their decisions.”

Russell Reynolds Associates’ recent research (called ‘*The CISO Assessment Level Model CALM*’) helped to define some of the traits and skills that different organizations may need to find the right CISO for them. Ultimately, if a CISO believes that cyber security is an IT issue, they are more likely to be reactionary and transactional. Whereas the CISOs who place their role at the center of business operations and strategy are anticipatory and relational. Unsurprisingly, the latter group typically answer into the board or executive committee of organizations and command higher compensation, while the former are likely to have a less elevated position in their company.

CIOs

While the notion of commercially-savvy CIOs may be a development in most sectors over the last decade, it was pioneered by several companies in the consumer sector before that – such as Walmart, Procter & Gamble, and American Express. Odgers Berndtson's Hussey explains: "The best consumer companies have innovation at the core of their business. The line between technology and marketing has become almost non-existent in these companies over the last 10-15 years."

While the consumer sector can yield commercial CIOs, TRANSEARCH's Storvseen explains that there are other places to look if you are searching for a more strategic CIO. "You can find a good combination of technical skills and business acumen in the professional services sector," he says. "Those companies do a lot of structural and strategic work. In my experience those consultants are open to a conversation about going in-house, as long as the role works closely to the CEO."

The changes of the last decade have been so transformational for the CIO role and so disruptive for the technology function as a whole, it can be difficult to distinguish where the real expertise is. Essentially, everyone has been disrupted, so how do you know who responded well? That is why the value of executive search firms has also risen in this space, as Peter Hodgkinson (USA/UK), Consultant in Spencer Stuart's Financial Services and Information Technology Practices, explains: "You have to distinguish between those who have learned the new language and buzzwords of technology and those who have a genuine track record of success in this new dynamic. We earn our money by deciphering what's really been achieved and how."

CISOs

Because the role of today's CISO is so significantly different to the remit of a technology security professional a decade ago, there is an element of experimentation taking place to find the right CISO fit.

Gavin Colman (London), Partner at Heidrick & Struggles, says: "There hasn't been a clear career path for this role and that's what we need in order to develop security experts. CISOs tend to be quite an eclectic group. You get the technology people, who aren't always great communicators and are more interested in solutions. Then there are former consultants who have moved over, who are good in the C-suite but tend not to have the same depth of technical understanding. Finally there are people who have come through security roles, such as MI5, MI6, CIA, NSA etc., who were very popular for a period of time."

While individuals with a security, intelligence or military background had been considered ideal candidates to thrive in fast-paced, highly complex environments, that opinion has evolved – amidst concerns over cultural fit, the ability to manage teams outside of a command and control leadership style and differences between the role in the private and security sectors. Spencer Stuart's Hodgkinson explains: "In some cases that has been successful, but in a variety of others, people have struggled because they have found it difficult to go from an environment where they have the option of offense as well as defense to one focused on defense alone. We're also seeing an evolving trend for people with an engineering background who have a strong understanding of cloud computing. The logic is that as we get more sophisticated about how we store and manage our data in the Cloud, such skills will come to be critical to securing data for a modern enterprise."

A pressing need that consistently came up during interviews for this article was for greater training and focus on the level below the CISO. The threat of a cyber breach is not likely to abate any time in the foreseeable future. Therefore as the importance of the cyber security role continues to grow both in terms of mandate and responsibility, we will need a greater talent pool. Investment in mentoring, development and succession planning should be underway already so that we do not find ourselves continuously so under-resourced.

Q. WHERE DO YOU FIND EXECUTIVES WITH THE RIGHT SKILLS?

Q. WHAT ARE THE FUTURE OPPORTUNITIES FOR OUTSTANDING CIOs AND CISOs?

CIOs and CISOs

Beyond the opportunities within the CIO and CISO functional roles, do the skills that these executives have acquired qualify them to be considered for broader C-suite roles and even board positions? There are some success stories to report in the case of CIOs moving into new roles, because the position has existed for longer. Notable examples include: David Lister, who is the CIO at National Grid in the UK and now sits on five boards, including HSBC Bank Plc and the Department for Work & Pensions; John Hinshaw, who served as the CIO at Hewlett Packard and is now on the board of BNY Mellon; and Tania Howarth, whose expertise as CIO at Igloo Group led to her becoming CIO & Group HR Director and now Chief Operating Officer.

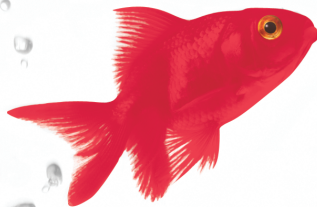
However, Stanton Chase's Smits explains that digital executives have to become more comfortable being their own ambassadors. "Nobody notices when something works as it should, so CIOs only hear when things don't work out," he says. "They are sometimes perceived as people who simply create issues. CIOs have to put effort and time into telling their own success stories."

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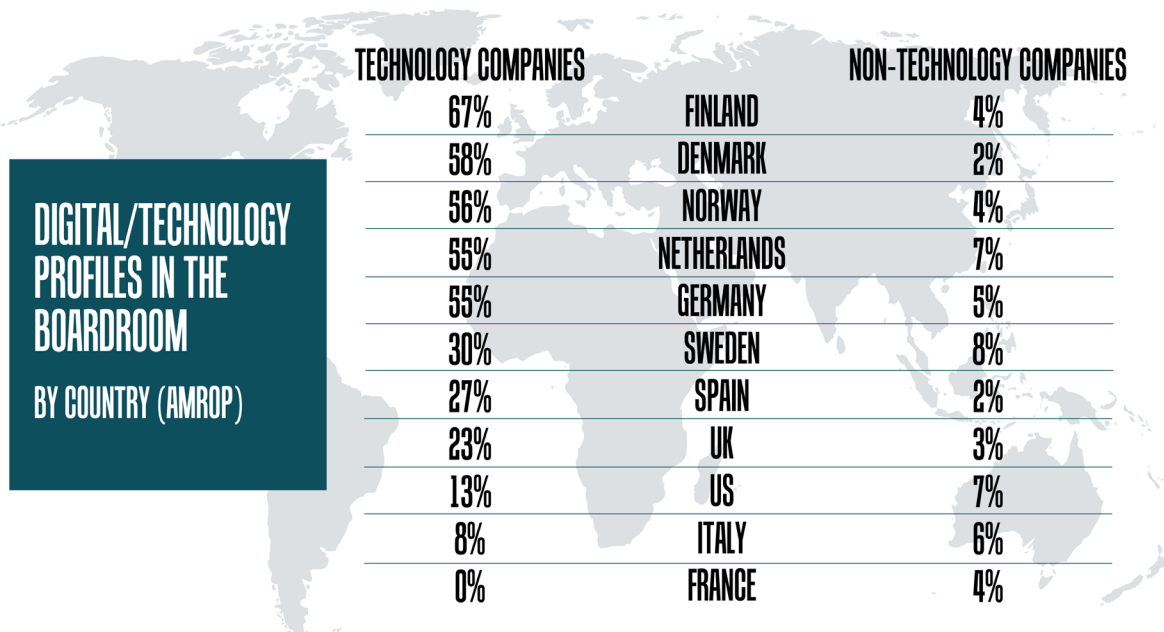


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DIGITAL/TECHNOLOGY PROFILES IN THE BOARDROOM

BY COUNTRY (AMROP)

Indeed, Amrop’s recent *Digital Board Skills Survey* shows that digital executives haven’t made it to board level yet. After analyzing 1,280 board directors from the largest publicly-listed companies in 11 countries across Europe and North America, Amrop found that on average only five percent of non-technology companies have digital competencies. This is both surprising and shocking when you think about the opportunities that digital and technological advances create for innovation and the constant threat of a cyber-attack.

Linn Freedman, cyber security expert and Partner at the law firm Robinson & Cole, believes that boards need to focus on identifying board members with cyber expertise with some urgency. “Boards need someone who understands the risks and the needs from a budgetary standpoint,” she says. “CISOs are dealing with this on their own and there is often a disconnect if the board doesn’t understand what is happening from a risk management perspective. There needs to be someone on the board to be a conduit of communication and understanding.”

No doubt we will see more of these examples as both the CIO and the CISO role continue to innovate as hubs of strategic innovation and risk management.

AMROP’S RECOMMENDATIONS FOR APPOINTING DIGITAL BOARD MEMBERS

Emulate digital-savvy players to recruit the right profiles. When designing a digital profile (and planning onboarding):

- Expect your candidate to be 10-15 years younger than the average age of your board
- Do not automatically expect your candidate to be in his or her early 30’s
- Expect your candidate to be used to an agile, fast-moving environment
- Seek a T-shaped profile: hands-on experience of large scale IT culture change, plus a broad, international leadership track record
- Look for previous board experience



Stand Out From the Digital Crowd

How can executives and researchers ensure that they’re using social media effectively, efficiently and lawfully?

Social media is a staple in the career marketing mix today. Recent research from the Pew Institute shows that social media usage has risen significantly from adults over the age of 50 over the last decade. But only one-third (35%) of adults over the age of 65 use social media for any purpose. Do executive search firms, whose businesses hinge on long-standing and trusting relationships, really lean on social media as much as higher-volume recruiters? How much time should executives looking to establish new relationships with executive search firms spend on social media and which sites should they prioritize?

Social media as social proof

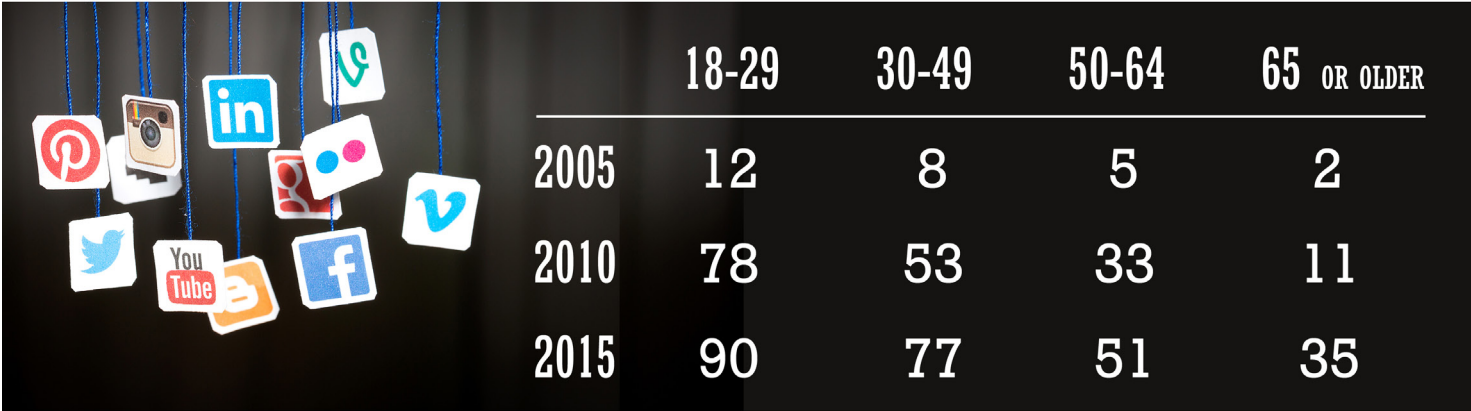
Executive search firms are looking for specific expertise and leadership traits, not

a jack-of-all-trades. So before diving into any one platform or site, executives should spend some time on a personal branding strategy. This will differ based on the region, industry and function that they work in, and those differences will help them establish what they intend to achieve from their social media activity.

If an executive search firm is looking for a marketing head for a consumer media company, they may look to Twitter and Facebook to get a sense of how much of a following an individual has. Whereas a search for an operations head at an oil and gas company may require more traditional research techniques.

Ultimately, you want to know that you are investing time in a place that could yield results, so look to see if executive search

PERCENTAGE OF ADULTS USING SOCIAL MEDIA



Source: Pew Institute

Top research methods executive search firms use



Personal networks and knowledge

Built over decades of industry and executive-level experience, an executive search professional's personal network is their biggest asset.



Proprietary databases

Most executive search firms maintain a database in which they store valuable candidate and client information, which becomes a valuable way of institutionalizing knowledge across a firm.



Sourcing calls

Capitalizing on their network, executive search professionals can extend their reach by soliciting high-value recommendations for assignments they are working on.



Boolean searches

Advanced internet searches using a long list of precise fields and words and stringing them together into a query (or string), enabling extremely specific results.



X-Ray searches

A form of Boolean search, x-ray searches allow specific results, filtered by a certain website – for example, scanning LinkedIn and defining the results you wish to see based on location, employer, job title, education history, and keywords.



Social media

Typically used at the front-end of an executive search for candidate identification and background research, social media is a valuable recent tool in the researcher's toolkit.



Event programming and attendance lists

Candidates can demonstrate their knowledge and position themselves as a thought-leader by appearing at industry events, which is also a great way to expand a network.



Industry news and thought leadership

These can be further used to demonstrate a candidate's status as a thought-leader.

consultants and other industry thought leaders have profiles and are active on the site you are considering.

"I look at social media as both inbound and outbound marketing," says Kathy Simmons (USA), Executive Director of BlueSteps Executive Career Services. "Particularly with LinkedIn, it's not only a way to be found, but also a way to demonstrate social proof."

Different platforms offer different opportunities to validate your expertise and your position as an expert – LinkedIn has recommendations and endorsements, Facebook has likes and shares, Twitter has retweets and likes – so it is important to build a network of engaged connections

once you begin using a site. Look for trends and topics that you can comment on that will yield engagement from other users – all the while thinking about your personal brand.

"Social media checks can be useful to show a candidate's temperament and to judge if they will fit with what the client wants," says Peter Lagomarsino (USA), Partner at The Mintz Group. "People can reveal a lot online and it is useful to check that the candidate's social media history matches what they have disclosed to you privately."

Indeed, the use of social media for both candidate identification and background

Top tips for executive career management on social media

Michelle Cornish

Head of Research at Bushell & Cornish (Australia), says

FOCUS ON YOUR ACHIEVEMENTS

We want to hear success stories. Talking about what you've achieved and how you achieved it, rather than rehashing your job description.

Heather Fookes

Director of Research at Davies Park, says

BE CONSISTENT

Before starting something, really think about whether you will have the time to keep it going. In some ways it looks worse if people have inactive Twitter accounts and blogs.

Fatih Pekbas

Partner at Stanton Chase, says

BE SPECIFIC

If you want to get the attention of executive search firms you should focus on your specialty. Don't write a long list of areas that you can work in because it isn't helpful.

checking has grown in popularity amongst research teams – although perhaps not as much as might be assumed. When talking to a selection of executive search professionals on this topic, they estimated that their researchers spent on average 20-30% of their time on social media. The rest of the time is spent on traditional research techniques (sourcing calls, personal networks, internal databases), advanced internet searches (Boolean and x-ray searches, reviewing industry event speakers, reading thought leadership) and in-person interaction.

Noting that social media is one of many tools used by executive search firms, there is a balancing act to strike between being visible and spending too much time online, as Fatih Pekbas, Partner at Stanton Chase (Germany), explains. "If, from time to time, someone posts a relevant article that they have written, that can be very useful and is something we appreciate. But if they're regularly posting articles from other sources, it can be detrimental. Some people post five or six times per day and you begin to wonder why they have so much time on their hands."

Public versus private posts

Whatever platform or platforms candidates decide to use for professional networking, they must also be acutely aware that anything posted by them or about them publicly online could be found during the research and

background checking process. This includes posts, pictures and videos that other people have tagged you in. Background checking also doesn't have a time limit, and candidates risk being caught out by posts and pictures from years ago unless they go back and do some social media housekeeping.

A recent example from the sports world shows the impact that old social media posts can have: earlier this year Andre Grey was considered to be an exciting young soccer player in England. But when a journalist discovered a series of homophobic tweets from 2012, Gray's career was in tatters. Despite his apologies and insistence that he no longer holds those views, he was suspended from playing soccer and handed a large fine.

It goes to show how easy it is for a skilled researcher to discover past posts that may not reflect a candidate in their best light. There will likely come a time, when more candidates from generation X and Y enter the executive suite, that there may be less attention paid to historic social media posts, but in the meantime, executive-level candidates should know what is publicly accessible about them online. "These things can come back to haunt you years later," says Heather Fookes, Director of Research at Davies Park (Canada). "Candidates can be excluded without even knowing it."

Fookes goes on to explain that this is especially pertinent as it relates to

pictures, and recommends that we all think carefully before posting images online and allowing images of us to be posted online. "If somebody says that they went hunting over the weekend, it may not be an issue," she says. "But if they upload a picture of themselves standing proudly next to a deer that they have shot, it has a very different impact."

In one example that was retold, a candidate who had made it to the final three for a CEO position was ultimately excluded due to a picture they had posted publicly on their Facebook page. The picture in question was of the candidate and his wife at the beach on vacation in their bathing suits. The conservative board ultimately felt that they couldn't trust the judgment of someone who would publicly post a picture of themselves wearing what they deemed to be a revealing outfit. This demonstrates how subjective the assessment of social media posts can be and why it is better to proceed with caution when posting.

The right to respond

At the executive level, there aren't many instances where an individual's social media posts will rule them out entirely – aggressiveness, prejudiced and offensive statements, leaks of sensitive business information, consistent bad language, or regular drink or drug-related posts can end an individual's candidacy immediately. But most of the

Top tips for executive career management on social media

Kate Bullis

Co-Founder and Managing Director
at SEBA International, says:

HAVE A GREAT NETWORK

If I've got mutual connections with you and can see that they're great people, that's the difference between me walking to the phone and running to the phone.

Daniel Young

Senior Associate at Witt/Kieffer,
says

BE AWARE OF YOUR PRIVACY

Keep your privacy settings up-to-date for any outlet or medium that you don't use professionally.

Jay Andre

Senior Director, Research at
Kincannon Reed, says

GIVE EVIDENCE OF ACHIEVEMENTS

It's very useful when people include links to speeches and presentations that they have given. They're providing proof of their achievements and in some instances that truncates the process.

Kathy Simmons

Executive Director at BlueSteps
Executive Career Services, says

UNDERSTAND HOW RESEARCH WORKS

It's very useful to know how the search algorithms work. Then you can make sure that you have a good profile and a good tagline and that you're using the right keywords to stand out.

Karen Russo

President at IIPE International
Executive Research (Mexico),
says

SHOW YOUR PERSONALITY

Our clients don't want a company full of drones. I like it when I see candidates who are family-oriented and fair-minded. I look for posts that are appropriate and also reflect genuine spirit, kindness, drive and passion.

time the posts are more marginal than this. It is then the responsibility of the executive search firm to discuss them with the candidate.

"If we see something concerning or a discrepancy between what we've been told and what we see online, it's our job as executive search professionals to find out what is going on," says Daniel Young (USA), Senior Associate at Witt/Kieffer. Having built trusting relationships with candidates, and offering the objectivity of a third party, executive search professionals are best-placed to discuss these potentially thorny issues.

BlueSteps Executive Career Services' Simmons relays a recent example that she encountered that shows the importance of having a frank conversation with candidates about any concerning posts. "There was a picture of an individual that looked like they were taking cocaine," she says. "It showed up in a basic Google Image search. When they were asked about it, the candidate explained that it was part of a reenactment for an anti-drug campaign that they were active in."

Candidates cannot be ruled out of contention for a role based on anything discovered online that is currently included in anti-discrimination laws in a specific jurisdiction. But beyond this there is little or no legal protection for individuals (although certain jurisdictions around the world, such as Europe, Hong Kong, Canada and Australia, are moving to guard their rights of their citizens

through data protection regulations).

In such an unregulated environment, it becomes extremely important for firms to hold themselves to a high set of standards. The Mintz Group's Lagomarsino outlines his approach to background checking on social media: "Universal principles that should be honored include: informing the employee or candidate that they will be checked; only searching public information; never asking for passwords or access to individuals' accounts; maintaining a high standard of accuracy; allowing the candidate to respond to anything adverse; and removing social media information from our database as soon as it's practical to do so."

Ultimately, social media can be a powerful tool for executives to demonstrate their expertise and identify executive search consultants that they would like to connect with. But they should also be aware of the risks associated and regularly make sure that there isn't something that they aren't aware of keeping them from making their next career move.

For executive search firms, social media remains a useful tool to identify and learn more about executives. But it remains just one of many tools, and one that is only really useful at the front-end of an assignment. At the executive level, it does not serve as a proxy for personal relationships – a state of play that won't change any time soon. ■

Innovation with a Higher Purpose

Gerd Leonhard is a futurist who is listed by *Wired Magazine* as one of the top 100 most influential people in Europe. In this brief Q&A he outlines his new book, *Technology vs Humanity*, and how it relates to our profession



How soon can we expect automation to have a significant impact on the labor market?

We're looking at the point where in roughly ten years all the things that were science fiction become possible. Nanobots in my bloodstream cleaning cholesterol, for example. It means we will find ways to bring more machines to the labor market. For example, rather than calling your assistant, you just speak to a device and it will book the flight when you want it to.

But this is also where my colleague Paul Saffo, who is a leading futurist in San Francisco, likes to say "we should not mistake a clear view for a short distance". So yes all of these things will be possible but I think it will take longer for them to be commercially relevant. For example, people get ahead of themselves when thinking about self-driving cars. We're not too far away from being about to travel around cities at 20mph but being in a self-driving car on a motorway is a long way away.

Technological unemployment and human de-skilling are two slightly scary sounding phrases that are mentioned in the introduction to your book several times. Is there a corporate responsibility to consider how technological growth could begin to impact humanity on a wide scale? Will this require a shift in mindset for most business leaders?

The problem with technology is that people are barking up the wrong tree by saying it is all about efficiency and margins. It's really not about that. It's that once you've reached peak efficiency, what do you do next?

If you don't question 'why?' then you end up in a place that is in technological overdrive. So how do we deal with that power we have and put it into context? How do we create rules about what is acceptable and who is in charge?

If it's true that we're not too far away from a future where machines can talk like us, work like us and think like us, what makes us human?

That's the ultimate question. What humans do is to a very high degree not data. Basically it will be a long time before we can understand the workings of the giant machine that is the human body. Things like compassion, values, feelings and emotions make us human. We can meet somebody for one second in a hallway and we will immediately know who that person is, which computers can't do. 99% of what we are is not specific or algorithmic – at least to the point that we can understand it. ■



Chapter 1: A Prologue to the Future

Humanity will change more in the next 20 years than in the previous 300 years.

Human beings have a habit of extrapolating the future from the present, or even the past. The assumption is that whatever worked well for us up to now should, in some slightly improved shape or form, also serve us nicely in the future. Yet the new reality is that, because of the increased impact of exponential and combinatorial technological changes, the future is actually very unlikely to be an extension of the present. Rather, it is certain to be utterly different—because the assumption framework and the underlying logic have changed.

Therefore, in my work as a futurist I try to intuit, imagine, and immerse myself in the near future (five to eight years out), present views from that world, and then work my way back to the present from there rather than towards it.

Starting with a report from that near future, this book goes on to explore the challenges and lay out a manifesto, a passionate call to stop and think before we all get swept up in the magic vortex of technology, and eventually become fundamentally less rather than more human. This is a good time to remember that the future does not just happen to us—it is created by us, every day, and we will be held responsible for the decisions we make at this very moment.

A historic inflection point

I feel that we are living in one of the most exciting times in the history of mankind, and I am generally very optimistic about the future. However, we definitely need to define and practice a more holistic approach to technology governance in order to safeguard the very essence of what being human means.

We are at the inflection point of an exponential curve in many fields of science and technology (S&T), a point where the doubling from each measurement period to the next is becoming vastly more significant.

At the heart of the story of exponential change lies Moore's Law—a concept which originated in the 1970s, and which, simply put, suggests that the processing speed (i.e. the amount of computer processing power on a chip) that we can buy for US\$1,000 doubles roughly every 18–24 months.

"We are living in one of the most exciting times in the history of mankind, and I am generally very optimistic about the future."

This exponential pace of development is now evident in fields as diverse as deep learning, genetics, material sciences, and manufacturing. The time required for each exponential performance step is also declining in many fields, and this is driving the potential for fundamental change across every activity on the planet. In practical terms, we are now past the stage in the life of the curve where it was difficult to gauge that something is happening at all, i.e. we are no longer moving in small steps from 0.01 to 0.02 or 0.04 to 0.08.

At the same time, fortunately, we are not yet at the point where those doublings are so great that the results will overwhelm our understanding and inhibit our capacity to act. To put things in perspective, in my view we are at a relative performance

level of around four in most fields, and the next exponential step will take us to eight, rather than a more linear rise to five! This is the very moment when exponential increases are starting to really matter, and technology is now driving exponential changes in every sector of our society, from energy, transportation, communications, and media, to medicine, health, food, and energy.

Witness the recent changes in the car industry—during the past seven years we've gone from electric cars with a range of less than 50 miles to the latest Tesla and BMWi8 promising over 300 miles on a single charge. We've also gone from a handful of charging locations to the astounding fact that New York City already has more electric vehicle (EV) charging stations than gas stations. Nearly every month there's a new breakthrough in battery efficiency, a limitation which has for the past decades been one of the biggest barriers to mass adoption of EVs. Soon we'll charge our EVs just once a week, then once a month, and eventually maybe just once a year—and then it seems likely that very few people will still be interested in huge luxury cars with good old gas engines!

Witness the even more dramatic cost decline in human genome sequencing, with the price falling from around US\$10 million in 2008 to approximately US\$800 today. Imagine what might happen when exponentially more powerful supercomputers move into the cloud and become available to every medical facility or lab: The cost of sequencing an individual's genome should quickly drop below US\$50.

Next, imagine the genome profiles of some two billion people uploaded to a secure cloud (hopefully in an anonymized way!) for use in research, development, and analysis—much of it performed by

artificial intelligence (AI) running on those very same supercomputers. The scientific possibilities that will be unleashed will blow away anything we have dreamed of, while simultaneously bringing enormous ethical challenges: dramatic longevity increases for those that have the budget, the ability to reprogram the human genome, and—potentially—the end of aging, or even dying. Will the rich live forever while the poor still can't even afford malaria pills?

Such exponential developments suggest that continuing to imagine our future in a linear way will probably lead to catastrophically flawed assumptions about the scale, speed, and potential impacts of change. That may be part of the reason why so many people cannot seem to grasp

the growing concerns about technology trumping humanity—it all seems so far away, and, for now, rather harmless because we are only at four on this curve. Issues such as the increasing loss of privacy, technological unemployment, or human deskilling are still not in-our-faces enough—but this is bound to change very quickly.

It is also important to realize that the biggest shifts will happen because of combinatorial innovation, i.e. by the simultaneous exploitation of several Megashifts and elements of disruption. For example, in chapter 3, we'll discuss how we are increasingly seeing companies combining big data and the Internet of Things (IoT) along with AI, mobility, and the cloud to create extremely disruptive new offerings.

Suffice to say that nothing and no one will be untouched by the changes in store for us, whether they are realized with good will, while ignoring or neglecting to consider the unintended consequences, or with harmful intent. On the one hand, unimaginable technological breakthroughs may dramatically improve our lives and hugely further human flourishing (see chapter 9); on the other, some of these exponential technological changes are likely to threaten the very fabric of society and ultimately challenge our very humanness.

In 1993, computer scientist and famed science fiction author Vernor Vinge wrote:

Within 30 years, we will have the technological means to create

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superhuman intelligence. Shortly after, the human era will be ended. Is such progress avoidable? If not to be avoided, can events be guided so that we may survive?

Welcome to HellVen!

It is becoming clearer that the future of human-machine relations very much depends on the economic system that creates them. We are facing what I like to call HellVen (i.e. a blend of hell/heaven) challenges (#hellven). We are moving at warp speed towards a world that may resemble Nirvana, where we may no longer have to work for a living, most problems are solved by technology, and we enjoy a kind of universal abundance—sometimes referred to as the Star Trek economy.

However, the future could also usher in a dystopian society that is orchestrated and overseen by supercomputers, networked bots, and super-intelligent software agents—machines and algorithms, cyborgs and robots—or rather, by those who own them. A world where non-augmented humans might be tolerated as pets or as a necessary nuisance at best, or, at worst, enslaved by a cabal of cyborg gods; a dark society that would be deskilled, desensitized, disembodied, and altogether dehumanized.

"You may live to see man-made horrors beyond your comprehension."

—Nikola Tesla

Is this a paranoid view?

Let's consider what some of us are already witnessing in our daily lives: Low-cost, ubiquitous digital technologies have made it possible for us to outsource our thinking, our decisions, and our memories to ever-cheaper mobile devices and the intelligent clouds

behind them. These "external brains" are morphing quickly from knowing-me to representing-me to being-me. In fact, they are starting to become a digital copy of us—and if that thought is not worrying you yet, imagine the power of this external brain amplified 100x in the next five years.

Navigating a strange city? Impossible without Google Maps. Can't decide where to eat tonight? TripAdvisor will tell me. No time to answer all my emails? Gmail's new intelligent assistant will do it for me.

As far as man-machine convergence is concerned, we're not quite in a land

"Game-changing advances such as machine intelligence and deep learning, the IoT, and human genome editing are beginning to intersect and amplify each other."

where we stay at home while our cyborg doubles live out our lives for us, as in the 2009 Bruce Willis film *Surrogates*. Nor are we yet able to purchase human-like synths that can undertake a range of tasks and provide companionship as in the 2015 AMC TV series *Humans*—but we're not that far away either. In this book I will explain why I do not think the dystopian scenario is likely to happen. At the same time, I will argue that we are now facing some fundamental choices when it comes to deciding and planning how far we will allow technology to impact and shape our lives, the lives of our loved ones, and the lives of future generations. Some pundits may say we are already beyond the point of preventing such changes, and that this

is just the next stage in our "natural" evolution. I strongly disagree and will explain how I think humans can emerge as winners in this coming clash between man and machines.

Technology and humanity are converging, and we are at a pivot point

As I started writing this book and weaving the themes into my talks, three important words rose to the top and stood out—exponential, combinatorial, and recursive.

1. Exponential.

Technology is progressing exponentially. Even though the basic laws of physics may prevent microchips from becoming significantly smaller than they already are today, technological progress in general is still following Moore's Law. The performance curve continues to rise exponentially, rather than in the gradual or linear way humans tend to understand and expect. This represents a huge cognitive challenge for us: Technology grows exponentially, while humans (hopefully, I would add) remain linear.

2. Combinatorial.

Technological advances are being combined and integrated. Game-changing advances such as machine intelligence and deep learning, the IoT, and human genome editing are beginning to intersect and amplify each other. They are no longer applied just in specific individual domains—instead they are causing ripples across a multitude of sectors. For example, advanced human gene editing technologies such as CRISPR-Cas9 may eventually allow us to beat cancer and dramatically increase longevity. These are developments that would upend the entire logic of healthcare, social security, work, and even capitalism itself.

3. Recursive.

Technologies such as AI, cognitive computing, and deep learning may eventually lead to recursive (i.e. selfamplifying) improvements. For example, we are already seeing the first examples of robots that can reprogram or upgrade themselves or control the power grid that keeps them alive, potentially leading to what has been called an intelligence explosion. Some, such as Oxford academic Nick Bostrom, believe this could lead to the emergence of super-intelligence—AI systems which could one day learn faster and out-think humans in almost every regard. If we can engineer AIs with an IQ of 500, what would keep us from building

others with an IQ of 50,000—and what could happen if we did?

Thankfully, recursive super-intelligence is not yet on the immediate horizon. However, even without such challenges, we are already grappling with some rapidly escalating issues, such as the constant tracking of our digital lives, surveillance-by-default, diminishing privacy, the loss of anonymity, digital identity theft, data security, and much more. That is why I am convinced the groundwork for the future of humanity—positive or dystopian—is being laid here, today.

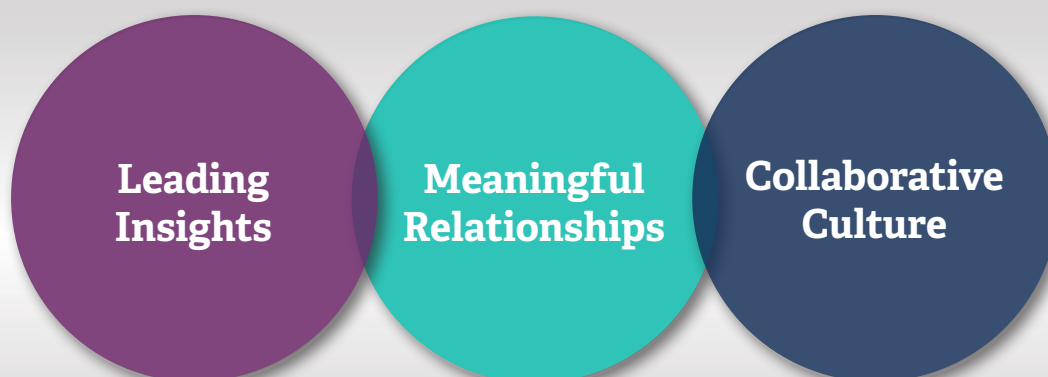
We are at a crucial junction, and we must act with much greater foresight, with a decidedly more holistic view, and with

much stronger stewardship as we unleash technologies that could end up having infinitely more power over us than we could ever imagine.

We can no longer adopt a wait-and-see attitude if we want to remain in control of our destiny and the developments that could shape it. Rather, we must pay equally as much attention to what it will mean to be or remain human in the future (i.e. what defines us as humans) as we spend on developing infinitely more powerful technologies that will change humanity forever.

We should take great care to not just leave these decisions to “free markets,” to venture capitalists, corporate technologists, or the world’s most powerful military

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organizations. The future of humanity should not be about some generic, Industrial Age paradigm of profit and growth at all costs, or some outmoded technological imperative that may have served us well in the 1980s. Neither Silicon Valley nor the world's most technologized nations should end up becoming "mission control for humanity" just because technology generates vast new revenue streams and large profits.

Thankfully, I believe we are still at a 90/10 point right now: 90% of the amazing possibilities presented by technology could play out well for humanity, while 10% might already be troublesome or negative. If we can maintain that balance, or bring it up to 98/2, that would be worth every effort. At the same time, that troubling 10% (even if mostly unintended at this time) may quickly balloon to 50% or more if we do not agree on exactly how we want these technologies to serve humanity. This is clearly not a good time to just "push ahead and see what happens."

Artificial intelligence and human genome editing are the two primary game changers

The first major force in the realm of exponential technologies is AI, simply defined as creating machines (software or robots) that are intelligent and capable of self-learning—i.e. more human-like thinking machines. The capability of AI is widely projected to grow twice as fast as all other technologies, exceeding Moore's Law and the growth of computing power, in general.

"By far the greatest danger of artificial intelligence is that people conclude too early that they understand it."

—Eliezer Yudkowsky

The companion game changer to AI is human genome engineering: altering

human DNA to put an end to some if not all diseases, reprogram our bodies, and possibly even end death. Indeed, AI will be a critical enabler of such reprogramming.

These two game changers and their scientific neighbors will have huge impact on what humans can and will be in less than 20 years. In this book, in the interests of brevity, I will focus in particular on AI and deep learning because of their immediate relevance to our future and their enabling role in the development

"The future of humanity should not be about some generic, Industrial Age paradigm of profit and growth at all costs, or some outmoded technological imperative that may have served us well in the 1980s."

of other "game changer" fields such as human genome editing, nanotechnology and material sciences.

Becoming as God?

Dr. Ray Kurzweil, currently Google's Director of Engineering, is a great influence on futurist thinking in general and on my own work, but also someone whose views I must often challenge in this book. Kurzweil predicts that computers will surpass the processing power of a single human brain by 2025, and that a single computer may match the power of all human brains combined by 2050. Kurzweil suggests these developments will herald the advent of the so-called Singularity, the moment when computers finally trump and then surpass human brains in computing power. This is the moment when human intelligence

may become increasingly nonbiological, when it may be possible for machines to independently, and quite likely recursively, go beyond their original programming—a decisive moment in human history.

Ray Kurzweil told his audience at Singularity University in late 2015: "As we evolve, we become closer to God. Evolution is a spiritual process. There is beauty and love and creativity and intelligence in the world—it all comes from the neocortex. So we're going to expand the brain's neocortex and become more godlike."

I also believe the point of computers having the capacity of the human brain is not far off, but—God or no God—unlike Dr. Kurzweil, I do not think we should willingly give up our humanness in return for the possibility of attaining unlimited nonbiological intelligence. That strikes me as a very bad bargain, a downgrade rather than an upgrade, and in this book I will explain why I passionately believe we should not go down that road.

Right now, in 2016, computers simply do not have the power to deliver on Kurzweil's vision. I believe the chips are still too big, networks still do not have the speed, and the electricity grid by and large cannot support machines that would need this much power. Obviously, these are temporary hurdles: Every day we hear announcements of major scientific breakthroughs and, in addition, numerous unpublicized advances are certain to be happening in secret in labs around the world.

We need to be ready for the Singularity: open yet critical, scientific yet humanistic, adventurous and curious yet armed with precaution, and entrepreneurial yet collectively-minded.

Science fiction is becoming science fact

Very soon, machines will be able to do things that once were the sole domain of

human workers—blue collar and white collar alike—such as understanding language, complex image recognition, or using our body in highly flexible and adaptive ways. By then, we will no doubt be utterly dependent on machines in every aspect of our lives. We will also likely see a rapid merging of man and machine via new types of interfaces such as augmented reality (AR), virtual reality (VR), holograms, implants, brain-computer interfaces (BCI), and body parts engineered with nanotechnology and synthetic biology.

If and when things such as nanobots in our bloodstream or communications implants in our brains become possible, who will decide what is human? If (as I like to say) technology does not (and probably should not) have ethics, what will happen with our norms, social contracts, values, and morals when machines run everything for us?

For the foreseeable future, despite the claims of AI evangelists, I believe machine intelligence will not include emotional intelligence or ethical concerns, because machines are not beings—they are duplicators and simulators. Yet eventually, machines will be able to read, analyze, and possibly understand our value systems, social contracts, ethics, and beliefs—but they will never be able to exist in, or be a part of, the world as we are (what German philosophers like to call *dasein*).

But regardless, will we live in a world where data and algorithms triumph over what I call *androrithms*, all that stuff that makes us human? (I will define exactly what I believe an *androrithm* is later in this book.)

Again, successive doublings from 4 to 8 to 16 to 32 are a whole lot different in impact than the doublings from 0.1 to 0.8. This is one of our toughest challenges today: We

must imagine an exponentially different tomorrow, and we must become stewards of a future whose complexity may well go far beyond current human understanding. In a way, we must become exponentially imaginative.

Gradually, then suddenly

For me, this line from Ernest Hemingway's *The Sun Also Rises* describes the nature of exponential change perfectly:

"How did you go bankrupt?"

"Two ways. Gradually, then suddenly."

When thinking about creating our future, it is essential to understand these twin memes of exponentiality and gradually then suddenly, and both are key messages

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in this book. Increasingly, we will see the humble beginnings of a huge opportunity or threat. And then, all of a sudden, it is either gone and forgotten or it is here, now, and much bigger than imagined. Think of solar energy, autonomous vehicles, digital currencies, and the blockchain: All took a long time to play out, but all of a sudden, they are here and they are roaring. History tells us that those who adapt too slowly or fail to foresee the pivot points will suffer the consequences.

Wait and see is very likely going to mean waiting to become irrelevant, or simply to be ignored, outmoded, and to wither away. Thus, we need another strategy for defining and retaining what makes us human in this quickly digitizing world.

I tend to think that markets will not self-regulate and deal with these issues by means of an “invisible hand.” Rather, traditional profit-and-growth-driven open markets will only escalate the challenges of humanity versus technology because these very same technologies are likely to generate opportunities worth trillions of dollars per year. Replacing human qualities, interactions, or idiosyncrasies with technology is simply too much of a business opportunity to question. For example, Peter Diamandis, a board member of a California company aptly called Human Longevity Inc., often proclaims that increasing longevity would create a US\$3.5 trillion global market. These irresistible new frontiers are likely to trump any such minor concern as the future of humanness.

Beyond mission control

In the end, we are talking about the survival and the flourishing of the human species, and I believe it just won't do to have venture capitalists, stock markets, and the military running the show on their own.

In the near future, we are certain to see some very tough battles between opposing world-views and paradigms with gigantic economic interests facing off against each other, a kind of humanists versus transhumanists' showdown. Now

that oil and other fossil fuels are declining as the driving force of politics and military concerns, the US and China are already at the forefront of an accelerating technological arms race. The new wars will be digital, and the battle is being waged for leadership in exponential game changers such as AI, human genome modification, the IoT, cyber security, and digital warfare. Europe (including and especially Switzerland, where I live) is somewhat stuck in the middle, more concerned with what many would see as lofty issues such as human rights, happiness, balance, ethics, and sustainable and collective well-being. As I'll explain, I believe addressing these concerns is actually our big opportunity here in Europe.

There are already global tribes of opinion leaders, serial entrepreneurs, scientists, venture capitalists, and assorted tech gurus (and yes, futurists as well) busy promoting a quick voluntary departure from humanism altogether. These techno-progressives are urging us to “transcend humanity” and embrace the next step in our evolution, which is, of course, to merge biology with technology, to alter and augment our minds and bodies and, in effect, become superhuman, ending disease (good) and even death— an alluring yet bizarre quest.

Interest in this notion of transhumanism is on the rise, and to me it is one of the most troubling developments I have observed in my 15 years of being a futurist. It is frankly a rather delusional idea to try and achieve human happiness by seeking to transcend humanity altogether through technological means.

For context, here are two contrasting positions on the concept, as laid out by transhumanism advocate and 2016 US Presidential Candidate Zoltan Istvan and the philosopher Jesse I. Bailey:

The Protagonist.

Istvan writes in his 2013 novel *The Transhumanist Wager*: The bold code of the transhumanist will rise. That's an inevitable, undeniable fact. It's embedded in the undemocratic nature of technology

and our own teleological evolutionary advancement. It is the future. We are the future, like it or not. And it needs to [be] molded, guided, and handled correctly by the strength and wisdom of transhumanist scientists with their nations and resources standing behind them, facilitating them. It needs to be supported in a way that we can make a successful transition into it, and not sacrifice ourselves—either by its overwhelming power or by a fear of harnessing that power.

You need to put your resources into the technology. Into our education system. Into our universities, industries, and ideas. Into the strongest of our society. Into the brightest of our society. Into the best of our society. So that we can attain the future.

The Humanist.

Challenging this position, Bailey writes in *The Journal of Evolution and Technology*: I argue that by threatening to obscure death as a foundational possibility for *dasein* (human existence), transhumanism poses the danger of hiding the need to develop a free and authentic relation to technology, Truth, and ultimately to *dasein* itself.

Transhumanists often make one of two claims: Either the body we inhabit now will be able to live for hundreds of years or our consciousness will be downloadable into multiple bodies. Either of these positions (in subtly, but importantly, different ways) alienates human experience from central aspects of the finitude of embodiment.

Heidegger locates being-toward-death as central to the call to authenticity, and away from lostness in the they-self (for whom technological enframing holds sway); by threatening our awareness of our own mortality, transhumanism thus threatens to occlude the call to authenticity, just as it occludes the need for it.

It is clear that technological determinism is not the solution, and that the prevailing

Silicon Valley ideology that argues, “Why don’t we just invent our way out of this, have loads of fun, make lots of money while also improving the lives of billions of people with these amazing new technologies?” could prove to be just as lazy—and dangerous—as Luddism.

In respectful contrast to some transhumanists’ rather Cartesian or reductionist views of humanity’s future (i.e. vastly simplified and reduced to looking at the world—and people—as a giant machine), this book will strive to outline a mindset and Digital Age philosophy that I sometimes call exponential humanism. Through this philosophy, I believe we can find a balanced way forward that will allow us to embrace technology but not become technology, to use it as a tool and not as a purpose.

To safeguard humanity’s future, we must invest as much energy in furthering

humanity as we do in developing technology. I believe that if we want a world that remains a good place for humans, with all our imperfections and inefficiencies, we must put significant resources (monetary and otherwise) into defining what a new kind of exponential humanism may actually entail. It will not be enough to just invest into the technologies that promise to make us superhuman—as we will soon ride on the shoulders of machines whose workings we don’t even understand any more.

If we don’t become more proactive on these issues, I worry that an exponential, unfettered, and uncontrolled intelligence explosion in robotics, AI, bioengineering, and genetics will eventually lead to a systematic disregard of the basic principles of human existence, because technology does not have ethics—but a society without ethics is doomed.

This dichotomy is arising everywhere:

Pretty much everything that can be digitized, automated, virtualized, and robotized probably will be, yet there are some things we should not attempt to digitize or automate—because they define what we are as humans.

This book explores where exponential and converging technologies might take us in the next ten years, highlights what is at stake, and explores what we can do about it today. No matter what your philosophical or religious persuasion, you will probably agree that technology has already entered our daily lives to such a vast degree that any further exponential progress will surely demand a new kind of conversation about where the advances are taking us, and why. Just as technology is literally about to enter our bodies and biological systems, it is time for a tribal pow-wow—the most important conversation the human tribe may ever have. ■

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GDPR: Why All Search Firms Must Pay Attention

How technology will be critical and how to plan your response now

What is the GDPR?

The General Data Protection Regulation (GDPR) is a regulation that was adopted by the European Parliament on the 14 May 2016. The GDPR protects anyone living in the EU and therefore influences any organization that is based in the EU or does business in the EU. Many businesses that are not currently subject to EU data protection law will be subject to GDPR.

The EU General Data Protection Regulation, or, GDPR, is meant to safeguard the data privacy rights of EU citizens and will be a key law to understand for any executive search firm that:

1. Does work in Europe,
2. Has clients that do work in Europe,
3. Has sources, prospects or candidates that are EU citizens,
4. May one day in the future do one of the above, or
5. Works in conjunction with another firm who does.

The potential penalties for non-compliance if discovered are quite stiff (up to €20 million), and the liability for a security breach exposing non-compliance the hard way can be even stiffer (the same penalties, plus liability to the individuals, plus horrible impact to reputation). The laws go into effect in less than two years (May 2018).

But you will have experts to support you

When GDPR comes into effect, it will be the strictest data privacy law anywhere in the world. This calls for the executive search profession to work together to make it workable. The AESC and its advisors are preparing streamlined guidance for search firms to remain in compliance. They have a voice with the authorities to help ensure that the interests of the executive search community are understood. At my firm, Cluen, we are innovating new technologies and tuning new workflows to make it easy

for every size search firm to be confident in their compliance with the GDPR.

Technology will be critical

Understanding your obligations and processes is one thing, but having a smooth way to operate is another. The critical technology foundations for GDPR include information security assurances and specialized functions to solve thorny problems and save user administrative tasks.

Information Security:

Your firm needs to provide adequate security controls to safeguard personal data of EU citizens, and you need to have the ability to document its adequacy. Having database data floating in Outlook, Word or Excel or in your shared folders is simply not organized, secure and auditable enough to meet the standards for GDPR. You will need not only a data provider that is certified with Privacy Shield and can deliver audit details of how your system is compliant, but also the AESC-specific protocols for information management.

Specialized functions:

Executive search is different from other information-intensive businesses that might touch personal data. There are many little areas where Cluen is innovating to solve the thorny problems. For example, under GDPR EU citizens have the right to request that you delete their name and file from your database (this first step requires a centralized system and a special function, but is fairly simple). But in conducting an executive search, how do you prevent your candidate ID process from re-entering their information right back in your database? Would you need to keep their name on a 'hands-off' list? But, then wouldn't you be in conflict with their original request? How ridiculous! Cluen has developed a special technology that can solve the problem of this paradox – you can be compliant in your deletion of a record and every instance of that name, and yet, have a 'magical' way to alert you should you ever try to enter the same name again.

So far, in reaction to GDPR, Cluen has **eleven specific technology features** in development that will either save minutes and hours of GDPR administrative time or solve an otherwise-impossible paradox. With less than two years to go, we want our customers to have plenty of time to get comfortable in their compliance.

Make your plan now, so you don't have to panic in 2018

We recommend that you start understanding your options over the coming months and make the most of the resources available to you: review the AESC information that is available, speak with your attorneys, call Cluen to ask what options we would propose (whether you are a current Cluen client or not, this advice is available at no charge to AESC members), and speak with your other advisors and providers.

Once you have all of the options available, you can take a few more months to decide what approach fits best for your firm and still have the better part of a year to fully implement. This will not be a big burden if spread over time like this. It will also be most cost effective if you are able to make a thoughtful plan. If you wait until the end of 2017 to start your exploration, then the condensed time investment may be burdensome, and the ability to find a cost-effective solution reduced. Reacting to an emergency in 2018 will certainly be most costly in time and budget.

Relax and embrace the future

You will have ample support from the advisors that surround you, and with the right processes and technology your firm will be in a leadership position, differentiating yourselves by assuring clients and candidates that you adhere to the highest standards. Leading the industry into the future will not only give you compliance with the regulations but also be a reward in itself. ■

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Enhanced Executive Search in a Digital Era

David Grundy, Chief Executive, Invenias, outlines the opportunities for executive search firms to embrace digital and mobile technology

Relationships are central to the success of a business, regardless of the industry in which they operate. However, in executive search where intimacy and insight into clients' needs and an understanding of candidates' capabilities are paramount, this statement rings even truer.

We live in a world where the information accessed and held on digital devices is fundamental to our everyday lives and instant feedback and access to information on the go is now a necessity rather than a possibility. In a world of digital expectancy, technologies are not intended to replace personal engagement or direct communication – they are a complimentary tool for strengthening relationships with your key stakeholders.

Enhancing the way you work

In adopting digital technology, the first step to success is to realize that you are simply replicating and enhancing the way you have always worked. You are continuing to strengthen key relationships by providing your clients with timely, relevant and informative communication. Through the use of digital technology, you can provide your clients with a fully branded and customizable portal that they can access on their mobile phone, laptop or device of choice, at a time that suits them. This proposition can really enhance the service you deliver and shine a light on the unique insight and value your firm

provides. If a client wants to check on the progress of an assignment late on a Friday night, digital technology allows them to log on and review the candidates put forward.

The ability to capture feedback on candidates is where the digital journey starts to get really interesting. You have the opportunity to make step-change improvements to the way that you work. Digital technology can enable you to capture the high value insight, opinion and scoring from client stakeholders and from across your firm. This is the data that is so much harder to capture and digitize but often encapsulates the essence of the value being created and delivered. The fostering of a collaborative, transparent and engaged search process between client and firm, should lead to better communication, understanding and ultimately a stronger and more successful search outcome.

Digital Collaboration with Candidates

Now, let's consider the experience of the candidate. Similarly, the use of digital technologies should be seen as a tool to enhance and enrich the key relationships between a candidate and their trusted consultant. Once more, strong communication is key. Streamlining the service you provide and your communication can be a real advantage in the running of efficient processes.

Consider yourself in the position of a candidate, en-route to an interview, having

perhaps had less time than hoped to prepare. You reach for your mobile phone and click on an app, branded with your favorite search firm's logo, containing all the information that you need. This will include the interview details, who you're meeting, their bio, company briefing and role description, the interview location and maps, the consultant and partner contact details.

Mobile technologies undoubtedly present one of the greatest opportunities to make digital collaboration between your team, the client and the candidate a reality. It presents the greatest opportunity to capture, share or view pertinent data on-demand. Mobile technology is always with us, so we must consider it central to effective digital success.

Digital technologies cannot and will not replace the fundamental basis of executive search, a trusted and personal relationship between firm and client. But as the world goes digital, it's an interesting and appropriate time for firms to reflect on how and where the opportunities that digital presents can be harnessed to help them stay relevant, informed, innovative and ahead.

If you would like to learn more about how digital technologies can enhance your key client and candidate relationships please [register for Invenias' free webinar](#) 'Digital Collaboration with your Clients and Candidates' on Tuesday 22nd November, 4pm GMT, 5pm CET, 11am EST, 8am PST. ■

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